

## **AMENDMENTS TO THE CLAIMS**

The following listing of claims will replace all prior versions and listings of claims in the application.

### **LISTING OF CLAIMS**

1. - 32. (Cancelled)

33. (Withdrawn) A method for use by an entity operating at least one mobile platform, for rescheduling objects scheduled for travel on the at least one mobile platform when a scheduling disruption occurs, the method comprising:

generating a disruption specification based upon an event, the disruption specification including data identifying objects that need to be rescheduled from an initial itinerary to a new itinerary;

analyzing the disruption specification and categorizing the objects into a first group that meet a first criterion, and a second group that does not meet the first criterion; and

rescheduling the objects of at least one of the two groups in parallel to generate rescheduling solutions for the objects in each of the first and second groups.

34. (Withdrawn) The method of claim 33, wherein the first criterion comprises not altering an initial origin and an initial destination of the objects.

35. (Withdrawn) The method of claim 33, wherein the rescheduling the objects of at least one of the two groups comprises providing the disruption specification to an integration engine;

using at least one of a fleet engine, a crew engine and a passenger engine to obtain information from the integration engine regarding the disruption specification, and to generate potential rescheduling solutions that consider work related limitations for crew members scheduled to travel on the mobile platform; and

using the integration engine to evaluate the potential rescheduling solutions.

36. (Withdrawn) The method of claim 35, wherein the integration engine creates the disruption specification using:

scheduling information for one of more mobile platforms that have been affected by the scheduling disruption,

a time frame within which the rescheduling solutions are to be carried out; and

resources including identifying one or more mobile platforms that have been affected by the scheduling disruption.

37. (Withdrawn) The method of claim 35, wherein one or more of the fleet engine, the crew engine and the passenger engine evaluate a feasibility, legality and penalty cost information in generating the potential rescheduling solutions.

38. (Withdrawn) The method of claim 35, wherein:

the objects are non-crew member passengers scheduled to travel on the mobile platform;

the passenger engine operates to generate information related to a number of the passengers per class on an affected mobile platform, connection constraints for the passengers, cancellation penalty value costs, and delays affecting the passengers that are represented by a numerical passenger value delay minute (PVDM).

39. (Withdrawn) The method of claim 35, wherein:

the objects include crew members scheduled to travel on the mobile platform;

the crew engine generates initial information related to at least one of:

connection constraints for the crew members;

a cancellation penalty cost value; and

crew member limitations involving at least latest crew departure times that may be permitted under rules or laws governing work of the crew members on the mobile platform.

40. (Withdrawn) The method of claim 35, wherein the fleet engine generates information related to at least one of:

available standby mobile platforms;

cancellation penalties; and

a preferred latest departure time of any one or more mobile platforms affected by the scheduling disruption.

41. (Withdrawn) The method of claim 35, wherein the fleet engine and the crew engine generate information that is used by the passenger engine to generate the plurality of rescheduling solutions that are attached to the disruption specification and then forwarded to the integration engine for evaluation.

42. (Withdrawn) The method of claim 41, wherein:  
the integration engine ranks the rescheduling solutions received from the passenger engine; and

wherein at least two of the fleet engine, the crew engine and the passenger engine operate in parallel to generate information relating to rescheduling solutions.

43. (Withdrawn) The method of claim 35, wherein the passenger engine operates to generate the potential rescheduling solutions by creating a plurality of subproblems, with each said subproblem defining a set of all passengers that are displaced from the same segment of travel of the initial itinerary.

44. (Withdrawn) The method of claim 43, further comprising:

applying a first algorithm to the subproblems, where the first algorithm is constrained to the initial itinerary for each passenger in each said subproblem, to generate alternative itineraries, and further identifying those passengers that have been deemed to be unsuitably rescheduled through the use of the first algorithm; and

further comprising using a second algorithm that is not constrained to the initial itinerary, for those said passengers that were deemed to be unsuitably rescheduled through the rescheduling solutions generated by the first algorithm, to generate additional rescheduling solutions.

45. (Currently Amended) A method for rescheduling passengers scheduled for travel on at least one affected mobile platform when a scheduling disruption occurs, the method comprising:

providing scheduling information in a computer readable medium for the at least one affected mobile platform and for other mobile platforms to a computer system that implements an integration engine;

using the integration engine and the scheduling information to generate a disruption specification based upon an event, the disruption specification including data identifying passengers and crew members needing to be rescheduled from travel on an initial mobile platform, and penalty cost information relating to available actions that may be taken to recover from the disruption and to rebook passengers on two or more alternative itineraries to identify;

simultaneously in parallel, using a processing subsystem to implement:

a fleet engine to obtain information from the integration engine regarding the disruption specification, and to generate information relating to alternative mobile platforms that are available for use in connection with a new itinerary;

a crew engine to obtain information from the integration engine regarding the disruption specification, and generate information relating to constraints for crew members scheduled to travel on the initial mobile platform, wherein the constraints for the crew members would legally prevent any one or more of the crew members from being re-scheduled to work in connection with the new itinerary;

the crew engine and the fleet engine each eliminating a subset of initial potential recovery solutions that do not meet ~~any one~~ of feasibility and ~~[[or]]~~ legality ~~consideration~~considerations, and to generate a plurality of possible recovery solutions;

using a passenger engine to receive the possible recovery solutions and to generate information relating to constraints affecting passengers scheduled for travel on the initial mobile platform; and

further using the passenger engine to generate one of an overall solution or a plurality of ranked rescheduling solutions for a group comprising one of the passengers or the crew members.

46. (Previously Presented) The method of claim 45, further comprising using the integration engine to obtain the information generated by one or more of the fleet engine, the crew engine and the passenger engine, and to use the obtained information

to determine potential rescheduling solutions acceptable for both the passengers and the crew members.

47. (Previously Presented) The method of claim 45, further comprising using in parallel each of the fleet engine, the crew engine and the passenger engine to generate information to be considered by the integration engine.

48. (Previously Presented) The method of claim 45, wherein the integration engine creates the disruption specification using:

a time frame within which the rescheduling solutions are to be carried out, the time frame comprising midnight of the day that the scheduling disruption occurs; and

resources including identifying one or more mobile platforms that have been affected by the scheduling disruption.

49. (Previously Presented) The method of claim 45, wherein one or more of the fleet engine, the crew engine and the passenger engine evaluate feasibility, legality and penalty cost information in generating the potential rescheduling solutions.

50. (Currently Amended) The method of claim 45, wherein:

- the crew engine operates to generate initial information related to at least one of:
  - connection constraints for the crew members;
  - a cancellation penalty cost value; and
  - ~~crew member limitations involving at least latest crew departure times that may be permitted under rules or laws governing work of crew members on the mobile platform; and~~
- wherein the fleet engine generates information related to at least one of:
  - available standby mobile platforms;
  - cancellation penalties; and
  - a preferred latest departure time of any one or more mobile platforms affected by the scheduling disruption.



51. (Previously Presented) The method of claim 45, wherein the passenger engine operates to generate the information used for generating potential rescheduling solutions by creating a plurality of subproblems, with each said subproblem defining a set of all passengers that are displaced from the same segment of travel of the initial itinerary;

wherein the passenger engine applies a first algorithm to the subproblems, where the first algorithm is constrained to the initial itinerary for each passenger in each said subproblem, to generate alternative itineraries for a first subset of all of the passengers, and further identifying those passengers excluded from the first subset that have been deemed to be unsuitably rescheduled through the use of the first algorithm; and

further comprising using a second algorithm that is not constrained to the initial itinerary, for those said passengers defining a second subset of all the passengers, that were deemed to be unsuitably rescheduled through the rescheduling solutions generated by the first algorithm, to generate additional rescheduling solutions for the second subset of passengers.

52. (Currently Amended) A method for rescheduling passengers scheduled for travel on at least one affected mobile platform when a scheduling disruption occurs, the method comprising:

providing scheduling information in a computer readable medium for the at least one affected mobile platform and for other mobile platforms to a computer implemented integration engine;

using the integration engine and the scheduling information to generate a disruption specification based upon an event, the disruption specification including data identifying passengers and crew members needing to be rescheduled from travel on an initial mobile platform, and penalty cost information relating to available actions that may be taken to recover from the disruption and to rebook passengers on an alternative itinerary;

simultaneously in parallel, using a processing subsystem to implement:

a fleet engine to obtain information from the integration engine regarding the disruption specification, and to generate information relating to alternative mobile platforms that are available for use in connection with a new itinerary;

a crew engine to obtain information from the integration engine regarding the disruption specification, and generate information relating to constraints for crew members scheduled to travel on the initial mobile platform, the constraints including latest departure times;

using at least one of the crew engine and the fleet engine to consider constraints that would legally prevent one or more of the crew members from

~~participating in relating to a legality and a feasibility of~~ potential rescheduling solutions relative to the disruption specification;

a passenger engine to generate information relating to constraints affecting passengers scheduled for travel on the initial mobile platform; and

using the integration engine to obtain the information generated by the fleet engine, the crew engine and the passenger engine, and to use the obtained information to determine potential rescheduling solutions for both the passengers and the crew members that do not violate legality considerations concerning work rules for the crew members; and

wherein the potential rescheduling solutions are presented in:

a first subset of the passengers that have rescheduling solutions that are deemed to be acceptable; and

a second subset of the passengers not included in the first subset that are deemed to be unacceptably rescheduled.

53. (Currently Amended) A method for rescheduling passengers scheduled for travel on at least one affected mobile platform when a scheduling disruption occurs, the method comprising:

providing scheduling information in a computer readable medium for the at least one affected mobile platform and for other mobile platforms to a computer implemented integration engine;

using the integration engine and the scheduling information to generate a disruption specification based upon an event, the disruption specification including data

identifying passengers and crew members needing to be rescheduled from travel on an initial mobile platform, and penalty cost information relating to available actions that may be taken to recover from the disruption and to rebook passengers on an alternative itinerary;

simultaneously in parallel, using a processing subsystem to implement:

a crew engine to obtain information from the integration engine regarding the disruption specification, and generate information relating to constraints for crew members scheduled to travel on the initial mobile platform, the constraints including connection constraints for crew members and latest departure times for crew members that enable the crew members to meet legal requirements controlling work of the crew members; and

a passenger engine to generate information relating to constraints affecting passengers scheduled for travel on the initial mobile platform; and

using the integration engine to obtain the information generated by the crew engine and the passenger engine to determine potential rescheduling solutions for both the passengers and the crew members; and

wherein the potential rescheduling solutions are presented in:

a first subset of the passengers that have rescheduling solutions that are deemed to be acceptable; and

a second subset of the passengers not included in the first subset that are deemed to be unacceptably rescheduled.

54. (Previously Presented) The method of claim 53, further comprising:

using a fleet engine to obtain information from the integration engine regarding the disruption specification and information relating to alternative mobile platforms that are available for use in connection with a new itinerary; and

using the information relating to alternative mobile platforms in forming the potential rescheduling solutions.